

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

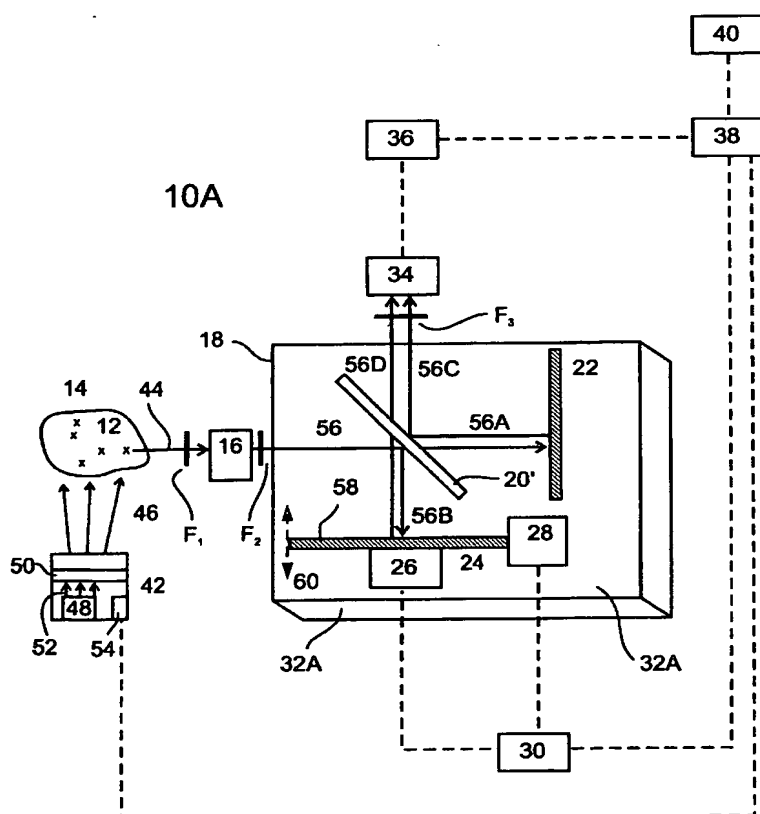
(19) World Intellectual Property Organization  
International Bureau(43) International Publication Date  
16 October 2003 (16.10.2003)

PCT

(10) International Publication Number  
**WO 03/085371 A2**

- (51) International Patent Classification<sup>7</sup>: **G01N** (81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (21) International Application Number: PCT/IL03/00292
- (22) International Filing Date: 7 April 2003 (07.04.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 149016 7 April 2002 (07.04.2002) IL
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- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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(54) Title: REAL TIME HIGH SPEED HIGH RESOLUTION HYPER-SPECTRAL IMAGING

(57) **Abstract:** Real time high speed high resolution hyper-spectral imaging. (a) electromagnetic radiation collimating element (16), collimating electromagnetic radiation (44) emitted by objects (12) in a scene or a sample (14); (b) optical interferometer (18), receiving and dividing collimated object emission beam, generating interference images, and piezoelectrically determining and changing magnitude of optical path difference of divided collimated object emission beam; optical interferometer (18) includes: beam splitter (20'), fixed mirror (22), movable mirror (24), piezoelectric motor (26), displacing movable mirror (24) along axis (60), distance change feedback sensor (28), sensing and measuring change in distance of movable mirror (24) along axis (60), piezoelectric motor controller (30), actuating and controlling piezoelectric motor (26); and thermo-mechanically stable optical interferometer mount (32A); (c) camera optics (34), focusing interference images of each optical path difference; (d) detector (36), recording interference images; (e) central programming and signal processing unit (38), and (f) display (40).